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FOX, JAMAL A	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/066,284	Applicant(s) LIANG ET AL.	
	Examiner Jamal A. Fox	Art Unit 2664	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133) Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28,31,32 and 34-55* is/are rejected.

7)☒ Claim(s) *29,30 and 33* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-7, 10-23, 26, 34-40 and 43-53 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al. (U.S. Patent Application Publication 2002/0191677).

Referring to claim 1, Chen et al. discloses a transmission coordination device (Fig. 1 and respective portions of the spec.) for a wireless communication network, wherein a first plurality of communication devices using a first protocol (FHSS, [0001], [0006], [0007], [0020], [0021], [0028], [0040], [0055], [0056], [0057] and [0059]) and a second plurality of communication devices using a second protocol (DSSS, [0022]) exchange information within the wireless communication network using overlapping (overlap, [0004]) communication frequencies, the device comprising:

a signal processing component (channel selector, [0030]) configured to receive information derived from the first and second plurality of network devices;

a traffic evaluation component (measurement circuit, [0030]) that assesses the information received by the signal processing component to identify impending collisions between the first and second protocol; and

a traffic coordination component that determines a communication link type between a master device and a slave device using the first protocol based on the type of communication link between the master device (master, [0026]) and the slave device (slave, [0026]).

Referring to claim 2, Chen et al. discloses a transmission coordination device of claim 1 wherein the traffic coordination component reduces collisions (collision, [0024], [0029], [0030], [0033], [0034], [0040], [0041], [0043], [0045], [0055], [0056] and [0058]) between information exchanged using the first protocol and the second protocol.

Referring to claim 3, Chen et al. discloses the device of claim 1, wherein the communication link type is a nondeferrable data type (SCO, [0026], [0050], [0051], [0059] and [0060]).

Referring to claim 4, Chen et al. discloses the device of claim 3, wherein the non-deferrable data type is a voice data type having a synchronous-connection-oriented (SCO) (SCO, [0026], [0050], [0051], [0059] and [0060]) communication link.

Referring to claim 5, Chen et al. discloses the device of claim 1, wherein type of communication link is a deferrable data type having an asynchronous-connection-link (ACL) (asynchronous, [0050], [0051], [0059] and [0060]) communication link.

Referring to claim 6, Chen et al. discloses the device of claim 1, wherein the traffic coordination component prioritizes (priority, [0004]; prioritized, [0005]) the exchange of information by delaying information exchange in the first or second protocol.

Referring to claim 7, Chen et al. discloses the device of claim 1, wherein the traffic coordination component prioritizes (priority, [0004]; prioritized, [0005]) the exchange of information by dropping at least some of the information exchanged in the first or second protocol.

Referring to claim 10, Chen et al. discloses the device of claim 1, wherein the first protocol or the second protocol is a frequency-hopping spread spectrum protocol (FHSS, [0001], [0006], [0007], [0020], [0021], [0028], [0040], [0055], [0056], [0057] and [0059]).

Referring to claim 11, Chen et al. discloses the device of claim 10, wherein the frequency-hopping spread spectrum protocol comprises a Bluetooth (Bluetooth, [0023]) protocol.

Referring to claim 12, Chen et al. discloses the device of claim 1, wherein the first or the second protocol is a direct-sequence spread spectrum protocol (DSSS, [0022]).

Referring to claim 13, Chen et al. discloses the device of claim 12, wherein the direct-sequence spread spectrum protocol comprises a wireless local area network (WLAN) protocol (WLAN, [0003]).

Referring to claim 14, Chen et al. discloses a centralized coordination device (Fig. 1 and respective portions of the spec.) for a wireless communication network, wherein information exchanged devices using a first protocol (FHSS, [0001], [0006], [0007], [0020], [0021], [0028], [0040], [0055], [0056], [0057] and [0059]) and a second

protocol (DSSS, [0022]) transmit a plurality of frequency-overlapping communication signals in the wireless communication network, the device comprising:

a signal processing component (channel selector, [0030]) configured to receive and analyze timing characteristics from the plurality of frequency-overlapping communication signals;

an evaluation component (measurement circuit, [0030]) configured to communicate with the signal processing component and further configured to determine a type of communication link type established by the information exchange devices using the first protocol; and

a coordination component (selector 103, [0030]) used to prioritize the plurality of frequency-overlapping communication signals based on the timing characteristics and the communication link type to reduce collisions in the information exchange of the first and second protocols.

Referring to claim 15, Chen et al. discloses the device of claim 14, wherein the communication link type is a non-deferrable data type (SCO, [0026], [0050], [0051], [0059] and [0060]).

Referring to claim 16, Chen et al. discloses the device of claim 15, wherein the non-deferrable data type is a voice data type (SCO, [0026], [0050], [0051], [0059] and [0060]).

Referring to claim 17, Chen et al. discloses the device of claim 16, wherein the voice data type is a synchronous-connection-oriented (SCO) communication link (SCO, [0026], [0050], [0051], [0059] and [0060]).

Referring to claim 18, Chen et al. discloses the device of claim 14, wherein the communication link type is a deferrable data type (asynchronous, [0050], [0051], [0059] and [0060]).

Referring to claim 19, Chen et al. discloses the device of claim 18, wherein the deferrable data type is an asynchronous-connection-link (ACL) communication link (asynchronous, [0050], [0051], [0059] and [0060]).

Referring to claim 20, discloses the device of claim 14, wherein the first or second protocol is a frequency-hopping spread spectrum protocol (FHSS, [0001], [0006], [0007], [0020], [0021], [0028], [0040], [0055], [0056], [0057] and [0059]).

Referring to claim 21, Chen et al. discloses the device of claim 20, wherein the frequency-hopping spread spectrum protocol comprises Bluetooth protocol (Bluetooth, [0023]).

Referring to claim 22, Chen et al. discloses the device of claim 14, wherein the first or second protocol is a direct spread spectrum protocol.

Referring to claim 23, Chen et al. discloses the device of claim 22, wherein the direct-sequence spread spectrum protocol comprises an IEEE 802.11B (802.11b, [0003], [0004], [0022], [0024] and [0026]) wireless local area network (WLAN) protocol.

Referring to claim 26, discloses a centralized coordination system (Fig. 1 and respective portions of the spec.) for a wireless communication network, wherein the wireless transfer of information is exchanged using overlapping communication frequencies, the system comprising:

a station access area, wherein a plurality of Bluetooth (Bluetooth, [0023]) communication devices using a Bluetooth (Bluetooth, [0023]) protocol generate a plurality of Bluetooth communication signals, and a plurality of WLAN communication devices using a WLAN (WLAN, [0003]) protocol generate a plurality of WLAN (WLAN, [0003]) communication signals;

a Bluetooth (Bluetooth, [0023]) master (master, [0026]) device configured to receive and analyze the plurality of Bluetooth communication signals derived from the plurality of Bluetooth communication devices and the plurality of WLAN (WLAN, [0003]) communication signals derived from the plurality of WLAN (WLAN, [0003]) communication devices;

a traffic evaluation component (measurement circuit, [0030]) used by the Bluetooth master (master, [0026]) device to evaluate the timing of the plurality of Bluetooth (Bluetooth, [0023]) and the WLAN (WLAN, [0003]) communication signals and to identify impending collisions between the plurality of Bluetooth and the WLAN (WLAN, [0003]) communication signals in the wireless communication network; and

a traffic coordination component (selector 103, [0030]) used to determine a type of communication link established between the Bluetooth (Bluetooth, [0023]) master device and the plurality of Bluetooth (Bluetooth, [0023]) communication devices, wherein the traffic coordination component prioritizes the plurality of wireless network transmissions to reduce collisions between Bluetooth and WLAN (WLAN, [0003]) communication signals and to improve throughput in the wireless communication network.

Referring to claim 34, Chen et al. discloses a method of scheduling a plurality of wireless communication signals between a first (FHSS, [0001], [0006], [0007], [0020], [0021], [0028], [0040], [0055], [0056], [0057] and [0059]) and second (DSSS, [0022]) protocol that operate with overlapping communication frequencies in a plurality of wireless network devices, the method comprising:

monitoring the wireless communication signals of the first (FHSS, [0001], [0006], [0007], [0020], [0021], [0028], [0040], [0055], [0056], [0057] and [0059]) and the second (DSSS, [0022]) protocols;

identifying impending collisions (collision, [0024], [0029], [0030], [0033], [0034], [0040], [0041], [0043], [0045], [0055], [0056] and [0058]) between the wireless communication signals of the first and the second protocol;

determining the transmission relationship between the plurality of wireless network devices using the first protocol, wherein the transmission relationship further identifies a type of communication link between a master (master, [0026]) device and a slave (slave, [0026]) device; and

implementing a collision avoidance (collision, [0024], [0029], [0030], [0033], [0034], [0040], [0041], [0043], [0045], [0055], [0056] and [0058]) procedure based on the type of communication link between the master (master, [0026]) device and the slave (slave, [0026]) device to reduce collisions and improve throughput in the wireless communication network.

Referring to claim 35, Chen et al. discloses wherein the type of communication link is a voice data type (SCO, [0026], [0050], [0051], [0059] and [0060]).

Referring to claim 36, Chen et al. discloses the method of claim 35, wherein the voice data type is a synchronous-connection-oriented (SCO) (SCO, [0026], [0050], [0051], [0059] and [0060]) communication link.

Referring to claim 37, Chen et al. discloses the method of claim 34, wherein the type of communication link is a general application data type (asynchronous, [0050], [0051], [0059] and [0060]).

Referring to claim 38, Chen et al. discloses the method of claim 37, wherein the general application data type is an asynchronous-connection-link (ACL) (asynchronous, [0050], [0051], [0059] and [0060]) communication link.

Referring to claim 39, Chen et al. discloses the method of claim 34, wherein the method of scheduling further comprises prioritizing (priority, [0004]; prioritized, [0005]) the plurality of wireless communication signals derived from at least one of the plurality of wireless network devices using the first protocol.

Referring to claim 40, Chen et al. discloses the method of claim 34, the method of scheduling further comprises prioritizing (priority, [0004]; prioritized, [0005]) the plurality of wireless communication signals by dropping at least one of the plurality of wireless communication signals derived from at least one of the plurality of wireless network devices using the first protocol.

Referring to claim 43, Chen et al. discloses the method of claim 34, wherein the first protocol is defined as a frequency-hopping spread spectrum protocol (FHSS, [0001], [0006], [0007], [0020], [0021], [0028], [0040], [0055], [0056], [0057] and [0059]).

Referring to claim 44, Chen et al. discloses the method of claim 43, wherein the frequency-hopping spread spectrum protocol comprises a Bluetooth (Bluetooth, [0023]) protocol.

Referring to claim 45, Chen et al. discloses the method of claim 34, wherein the second protocol is defined as a direct-sequence spread spectrum protocol (DSSS, [0022]).

Referring to claim 46, Chen et al. discloses the method of claim 45, wherein the direct-sequence spread spectrum protocol comprises IEEE 802.11B (802.11b, [0003], [0004], [0022], [0024] and [0026]) wireless local area network (WLAN) (WLAN, [0003]) protocol.

Referring to claim 47, Chen et al. discloses a method of scheduling a plurality of wireless communication signals derived from a frequency hopping spread spectrum (FHSS) (FHSS, [0001], [0006], [0007], [0020], [0021], [0028], [0040], [0055], [0056], [0057] and [0059]) protocol and a direct sequence spread spectrum (DSSS) (DSSS, [0022]) protocol that are transmitted with overlapping (overlap, [0004]) communication frequencies, the method comprising:

monitoring the wireless communication signals of the FHSS (FHSS, [0001], [0006], [0007], [0020], [0021], [0028], [0040], [0055], [0056], [0057] and [0059]) and the DSSS (DSSS, [0022]) protocols;

identifying impending collisions (collision, [0024], [0029], [0030], [0033], [0034], [0040], [0041], [0043], [0045], [0055], [0056] and [0058]) between the wireless communication signals of the FHSS (FHSS, [0001], [0006], [0007], [0020], [0021],

[0028], [0040], [0055], [0056], [0057] and [0059]) and the DSSS (DSSS, [0022]) protocols;

determining the transmission relationship between the plurality of wireless network devices using the FHSS (FHSS, [0001], [0006], [0007], [0020], [0021], [0028], [0040], [0055], [0056], [0057] and [0059]) protocol, wherein the transmission relationship further identifies a type of communication link between an FHSS (FHSS, [0001], [0006], [0007], [0020], [0021], [0028], [0040], [0055], [0056], [0057] and [0059]) master device and an FHSS (FHSS, [0001], [0006], [0007], [0020], [0021], [0028], [0040], [0055], [0056], [0057] and [0059]) slave device; and

implementing a collision (collision, [0024], [0029], [0030], [0033], [0034], [0040], [0041], [0043], [0045], [0055], [0056] and [0058]) avoidance procedure based on the type of communication link between the FHSS (FHSS, [0001], [0006], [0007], [0020], [0021], [0028], [0040], [0055], [0056], [0057] and [0059]) master device and the DSSS (DSSS, [0022]) slave device to reduce collisions (collision, [0024], [0029], [0030], [0033], [0034], [0040], [0041], [0043], [0045], [0055], [0056] and [0058]) and improve throughput in the wireless communication network.

Referring to claim 48, Chen et al. discloses the method of claim 47, wherein the type of communication link is a synchronous-connection-oriented (SCO) (SCO, [0026], [0050], [0051], [0059] and [0060]) communication link.

Referring to claim 49, Chen et al. discloses the method of claim 48, wherein the synchronous-connection-oriented (SCO) (SCO, [0026], [0050], [0051], [0059] and [0060]) communication link is a non-deferrable voice data type.

Referring to claim 50, Chen et al. discloses the method of claim 47, wherein the type of communication link is an asynchronous-connection-link (ACL) (asynchronous, [0050], [0051], [0059] and [0060]) communication link.

Referring to claim 51, Chen et al. discloses the method of claim 50, wherein the asynchronous-connection-link (ACL) (asynchronous, [0050], [0051], [0059] and [0060]) is a deferrable general application data type.

Referring to claim 52, Chen et al. discloses the method of claim 47, wherein the method of scheduling further comprises prioritizing the plurality of wireless communication signals by delaying at least one of the plurality of wireless communication signals derived from the FHSS (FHSS, [0001], [0006], [0007], [0020], [0021], [0028], [0040], [0055], [0056], [0057] and [0059]) protocol.

Referring to claim 53, Chen et al. discloses the method of claim 47, the method of scheduling further comprises prioritizing the plurality of wireless communication signals derived from the FHSS (FHSS, [0001], [0006], [0007], [0020], [0021], [0028], [0040], [0055], [0056], [0057] and [0059]) protocol.

3. Claims 1-5, 8-27, 34-38, 41-51, 54 and 55 are rejected under 35 U.S.C. 102(e) as being anticipated by Awater et al. (U.S. Patent Application Pub. No. 2001/0010689).

Referring to claim 1, Awater et al. discloses a transmission coordination device (Fig. 1 and respective portions of the spec.) for a wireless communication network, wherein a first plurality of communication devices using a first protocol (FHSS, [0005]) and a second plurality of communication devices using a second (DSSS, [0005])

protocol exchange information within the wireless communication network using overlapping (overlap, [0013]) communication frequencies, the device comprising:

a signal processing component (IEEE 802.11 MAC functional element 108, [0046]) configured to receive information derived from the first (interoperability device 106, [0046]) and second (physical layer functional element 112, [0046]) plurality of network devices;

a traffic evaluation component that assesses the information received by the signal processing component to identify impending collisions (collision, [0006]) between the first and second protocol; and

a traffic coordination component that determines a communication link type between a master device and a slave device using the first protocol based on the type of communication link between the master (master, [0071]) device and the slave (slave, [0071]) device.

Referring to claim 2, Awater et al. discloses a transmission coordination device of claim 1 wherein the traffic coordination component reduces collisions (collision, [0006]) between information exchanged using the first protocol and the second protocol.

Referring to claim 3, Awater et al. discloses the device of claim 1, wherein the communication link type is a nondeferrable data type (SCO, [0063]).

Referring to claim 4, Awater et al. discloses the device of claim 3, wherein the non-deferrable data type is a voice data type having a synchronous-connection-oriented (SCO) (SCO, [0063]) communication link.

Referring to claim 5, discloses the device of claim 1, wherein type of communication link is a deferrable data type having an asynchronous-connection-link (ACL) communication link (asynchronous, [0010] and [0061]).

Referring to claim 8, Awater et al. discloses the device of claim 1, wherein the transmission coordination device is interposed between a backbone network (Internet, [0051]) and the wireless communication network and acts as an access point (access point, [0004]) to link the wireless communication devices to the backbone network.

Referring to claim 9, Awater et al. discloses the device of claim 8, wherein the backbone network comprises land-based networks including Ethernet, digital subscriber line, dial-up (dial up, [0051]), or plane telephone networks.

Referring to claim 10, Awater et al. discloses the device of claim 1, wherein the first protocol or the second protocol is a frequency-hopping spread spectrum protocol (FHSS, [0005]).

Referring to claim 11, Awater et al. discloses the device of claim 10, wherein the frequency-hopping spread spectrum protocol comprises a Bluetooth (Bluetooth, [0013]) protocol.

Referring to claim 12, Awater et al. discloses the device of claim 1, wherein the first or the second protocol is a direct-sequence spread spectrum protocol (DSSS, [0005]).

Referring to claim 13, Awater et al. discloses the device of claim 12, wherein the direct-sequence spread spectrum protocol comprises a wireless local area network (WLAN) (wireless LAN, [0051]) protocol.

Referring to claim 14, Awater et al. discloses a centralized coordination device (Fig. 1 and respective portions of the spec.) for a wireless communication network, wherein information exchanged devices using a first (FHSS, [0005]) protocol and a second protocol (DSSS, [0005]) transmit a plurality of frequency-overlapping (overlap, [0013]) communication signals in the wireless communication network, the device comprising:

a signal processing component (IEEE 802.11 MAC functional element 108, [0046]) configured to receive and analyze timing characteristics from the plurality of frequency-overlapping (overlap, [0013]) communication signals;

an evaluation component configured to communicate with the signal processing component and further configured to determine a type of communication link type established by the information exchange devices using the first protocol (FHSS, [0005]); and

a coordination component used to prioritize the plurality of frequency-overlapping (overlap, [0013]) communication signals based on the timing characteristics and the communication link type to reduce collisions (collision, [0006]) in the information exchange of the first (FHSS, [0005]) and second protocols (DSSS, [0005]).

Referring to claim 15, Awater et al. discloses the device of claim 14, wherein the communication link type is a non-deferrable data type (SCO, [0063]).

Referring to claim 16, Awater et al. discloses the device of claim 15, wherein the non-deferrable data type is a voice data type (SCO, [0063]).

Referring to claim 17, Awater et al. discloses the device of claim 16, wherein the voice data type is a synchronous-connection-oriented (SCO) (SCO, [0063]) communication link.

Referring to claim 18, Awater et al. discloses the device of claim 14, wherein the communication link type is a deferrable data type (asynchronous, [0010] and [0061]).

Referring to claim 19, Awater et al. discloses the device of claim 18, wherein the deferrable data type is an asynchronous-connection-link (ACL) (asynchronous, [0010] and [0061]) communication link.

Referring to claim 20, Awater et al. discloses the device of claim 14, wherein the first or second protocol is a frequency-hopping spread spectrum protocol (FHSS, [0005]).

Referring to claim 21, Awater et al. discloses the device of claim 20, wherein the frequency-hopping spread spectrum protocol (FHSS, [0005]) comprises Bluetooth (Bluetooth, [0013]) protocol.

Referring to claim 22, Awater et al. discloses the device of claim 14, wherein the first or second protocol is a direct spread spectrum protocol (DSSS, [0005]).

Referring to claim 23, Awater et al. discloses the device of claim 22, wherein the direct-sequence spread spectrum protocol (DSSS, [0005]) comprises an IEEE 802.11B wireless local area network (WLAN) (wireless LAN, [0051]) protocol.

Referring to claim 24, Awater et al. discloses the device of claim 14, wherein the centralized coordination device is configured to interface with a backbone network (Internet, [0051]).

Referring to claim 25, Awater et al. discloses the device of claim 24, wherein the backbone network (Internet, [0051]) comprises land-based networks including Ethernet, digital subscriber line, dial-up (dial up, [0051]), or plane telephone networks.

Referring to claim 26, Awater et al. discloses a centralized coordination system (Fig. 1 and respective portions of the spec.) for a wireless communication network, wherein the wireless transfer of information is exchanged using overlapping (overlap, [0013]) communication frequencies, the system comprising:

a station access area, wherein a plurality of Bluetooth (Bluetooth, [0013]) communication devices using a Bluetooth (Bluetooth, [0013]) protocol generate a plurality of Bluetooth communication signals, and a plurality of WLAN (wireless LAN, [0051]) communication devices using a WLAN (wireless LAN, [0051]) protocol generate a plurality of WLAN communication signals;

a Bluetooth (Bluetooth, [0013]) master (master, [0071]) device configured to receive and analyze the plurality of Bluetooth (Bluetooth, [0013]) communication signals derived from the plurality of Bluetooth (Bluetooth, [0013]) communication devices and the plurality of WLAN communication signals derived from the plurality of WLAN (wireless LAN, [0051]) communication devices;

a traffic evaluation component used by the Bluetooth (Bluetooth, [0013]) master (master, [0071]) device to evaluate the timing of the plurality of Bluetooth (Bluetooth, [0013]) and the WLAN (wireless LAN, [0051]) communication signals and to identify impending collisions between the plurality of Bluetooth and the WLAN (wireless LAN, [0051]) communication signals in the wireless communication network; and

a traffic coordination component used to determine a type of communication link established between the Bluetooth (Bluetooth, [0013]) master (master, [0071]) device and the plurality of Bluetooth (Bluetooth, [0013]) communication devices, wherein the traffic coordination component prioritizes the plurality of wireless network transmissions to reduce collisions between Bluetooth and WLAN (wireless LAN, [0051]) communication signals and to improve throughput in the wireless communication network.

Referring to claim 27, Awater et al. discloses the system of claim 26, wherein the traffic coordination component is interposed between a backbone network (Internet, [0051]) and the station access area to regulate the wireless transfer of information between the plurality of Bluetooth (Bluetooth, [0013]) and WLAN (wireless LAN, [0051]) communication devices and the backbone network (Internet, [0051]).

Referring to claim 34, Awater et al. discloses a method of scheduling a plurality of wireless communication signals between a first (FHSS, [0005]) and second (DSSS, [0005]) protocol that operate with overlapping (overlap, [0013]) communication frequencies in a plurality of wireless network devices, the method comprising:

monitoring the wireless communication signals of the first (FHSS, [0005]) and the second (DSSS, [0005]) protocols;

identifying impending collisions (collision, [0006]) between the wireless communication signals of the first and the second protocol;

determining the transmission relationship between the plurality of wireless network devices using the first (FHSS, [0005]) protocol, wherein the transmission

relationship further identifies a type of communication link between a master (master, [0071]) device and a slave (slave, [0071]) device; and

implementing a collision (collision, [0006]) avoidance procedure based on the type of communication link between the master (master, [0071]) device and the slave (slave, [0071]) device to reduce collisions (collision, [0006]) and improve throughput in the wireless communication network.

Referring to claim 35, Awater et al. discloses wherein the type of communication link is a voice data type (SCO, [0063]).

Referring to claim 36, Awater et al. discloses the method of claim 35, wherein the voice data type is a synchronous-connection-oriented (SCO) (SCO, [0063]) communication link.

Referring to claim 37, Awater et al. discloses the method of claim 34, wherein the type of communication link is a general application data type (asynchronous, [0010] and [0061]).

Referring to claim 38, Awater et al. discloses the method of claim 37, wherein the general application data type is an asynchronous-connection-link (ACL) (asynchronous, [0010] and [0061]) communication link.

Referring to claim 41, Awater et al. discloses the method of claim 34, wherein the plurality of wireless network devices communicate with a backbone network (Internet, [0051]).

Referring to claim 42, Awater et al. discloses the method of claim 41, wherein the backbone network (Internet, [0051]) comprises land-based networks including Ethernet, digital subscriber line, dial-up (dial up, [0051]), or plane telephone networks.

Referring to claim 43, Awater et al. discloses the method of claim 34, wherein the first protocol is defined as a frequency-hopping spread spectrum protocol (FHSS, [0005]).

Referring to claim 44, Awater et al. discloses the method of claim 43, wherein the frequency-hopping spread spectrum (FHSS, [0005]) protocol comprises a Bluetooth (Bluetooth, [0013]) protocol.

Referring to claim 45, Awater et al. discloses the method of claim 34, wherein the second protocol is defined as a direct-sequence spread spectrum protocol (DSSS, [0005]).

Referring to claim 46, Awater et al. discloses the method of claim 45, wherein the direct-sequence spread spectrum protocol comprises IEEE 802.11B wireless local area network (WLAN) (wireless LAN, [0051]) protocol.

Referring to claim 47, Awater et al. discloses a method of scheduling a plurality of wireless communication signals derived from a frequency hopping spread spectrum (FHSS) (FHSS, [0005]) protocol and a direct sequence spread spectrum (DSSS) (DSSS, [0005]) protocol that are transmitted with overlapping (overlap, [0013]) communication frequencies, the method comprising:

monitoring the wireless communication signals of the FHSS (FHSS, [0005]) and the DSSS (DSSS, [0005]) protocols;

identifying impending collisions between the wireless communication signals of the FHSS (FHSS, [0005]) and the DSSS (DSSS, [0005]) protocols;

determining the transmission relationship between the plurality of wireless network devices using the FHSS (FHSS, [0005]) protocol, wherein the transmission relationship further identifies a type of communication link between an FHSS (FHSS, [0005]) master (master, [0071]) device and an FHSS (FHSS, [0005]) slave (slave, [0071]) device; and

implementing a collision (collision, [0006]) avoidance procedure based on the type of communication link between the FHSS (FHSS, [0005]) master device and the DSSS (DSSS, [0005]) slave device to reduce collisions (collision, [0006]) and improve throughput in the wireless communication network.

Referring to claim 48, Awater et al. discloses the method of claim 47, wherein the type of communication link is a synchronous-connection-oriented (SCO) (SCO, [0063]) communication link.

Referring to claim 49, Awater et al. discloses the method of claim 48, wherein the synchronous-connection-oriented (SCO) (SCO, [0063]) communication link is a non-deferrable voice data type.

Referring to claim 50, Awater et al. discloses the method of claim 47, wherein the type of communication link is an asynchronous-connection-link (ACL) (asynchronous, [0010] and [0061]) communication link.

Referring to claim 51, Awater et al. discloses the method of claim 50, wherein the asynchronous-connection-link (ACL) (asynchronous, [0010] and [0061]) is a deferrable general application data type.

Referring to claim 54, Awater et al. discloses the method of claim 47, wherein the wireless communication network communicates with a backbone network (Internet, [0051]).

Referring to claim 55, Awater et al. discloses the method of claim 54, wherein the backbone network (Internet, [0051]) comprises land-based networks including Ethernet, digital subscriber line, dial-up (dial up, [0051]), or plane telephone networks.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1, 14, 26, 28, 31, 32, 34 and 47 are rejected under 35 U.S.C. 102(e) as being anticipated by Lau et al. (U.S. Patent No. 6,690,657).

Referring to claim 1, Lau et al. discloses a transmission coordination device for a wireless communication network, wherein a first plurality of communication devices using a first (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) protocol and a second plurality of communication devices using a second (DSSS, col. 4 lines 65-67, col. 9 lines 15-35 and col. 10 lines 15-25) protocol exchange information within the wireless communication network using overlapping communication frequencies, the device comprising:

a signal processing component configured to receive (receiver, col. 4 lines 5-40) information derived from the first and second plurality of network devices;

a traffic evaluation component that assesses the information received by the signal processing component to identify impending collisions (collision, col. 2 lines 25-38) between the first (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) and second (DSSS, col. 4 lines 65-67, col. 9 lines 15-35 and col. 10 lines 15-25) protocol; and

a traffic coordination component (T/R modules, col. 10 lines 28-58) that determines a communication link type between a master (master, col. 10 lines 28-58 and col. 2 lines 50-65) device and a slave (slave, col. 10 lines 28-58) device using the first protocol based on the type of communication link between the master (master, col. 10 lines 28-58 and col. 2 lines 50-65) device and the slave (slave, col. 10 lines 28-58) device.

Referring to claim 14, Lau et al. discloses a centralized coordination device for a wireless communication network, wherein information exchanged devices using a first

(FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) protocol and a second (DSSS, col. 4 lines 65-67, col. 9 lines 15-35 and col. 10 lines 15-25) protocol transmit a plurality of frequency-overlapping (overlap, col. 6 lines 25-37) communication signals in the wireless communication network, the device comprising:

a signal processing component configured to receive (receiver, col. 4 lines 5-40) and analyze timing characteristics from the plurality of frequency-overlapping (overlap, col. 6 lines 25-37) communication signals;

an evaluation component configured to communicate with the signal processing component and further configured to determine a type of communication link type established by the information exchange devices using the first (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) protocol; and

a coordination component used to prioritize the plurality of frequency-overlapping (overlap, col. 6 lines 25-37) communication signals based on the timing characteristics and the communication link type to reduce collisions (collision, col. 2 lines 25-38) in the information exchange of the first (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) and second protocols.

Referring to claim 26, Lau et al. discloses a centralized coordination system for a wireless communication network, wherein the wireless transfer of information is

exchanged using overlapping (overlap, col. 6 lines 25-37) communication frequencies, the system comprising:

a station access area, wherein a plurality of Bluetooth (Bluetooth, col. 10 lines 38-58) communication devices using a Bluetooth (Bluetooth, col. 10 lines 38-58) protocol generate a plurality of Bluetooth (Bluetooth, col. 10 lines 38-58) communication signals, and a plurality of WLAN communication devices using a WLAN protocol generate a plurality of WLAN communication signals;

a Bluetooth (Bluetooth, col. 10 lines 38-58) master device configured to receive and analyze the plurality of Bluetooth (Bluetooth, col. 10 lines 38-58) communication signals derived from the plurality of Bluetooth (Bluetooth, col. 10 lines 38-58) communication devices and the plurality of WLAN communication signals derived from the plurality of WLAN communication devices;

a traffic evaluation component used by the Bluetooth (Bluetooth, col. 10 lines 38-58) master device to evaluate the timing of the plurality of Bluetooth (Bluetooth, col. 10 lines 38-58) and the WLAN communication signals and to identify impending collisions (collision, col. 2 lines 25-38) between the plurality of Bluetooth (Bluetooth, col. 10 lines 38-58) and the WLAN communication signals in the wireless communication network; and

a traffic coordination component used to determine a type of communication link established between the Bluetooth (Bluetooth, col. 10 lines 38-58) master device (master, col. 10 lines 28-58 and col. 2 lines 50-65) and the plurality of Bluetooth (Bluetooth, col. 10 lines 38-58) communication devices, wherein the traffic coordination

component prioritizes the plurality of wireless network transmissions to reduce collisions (collision, col. 2 lines 25-38) between Bluetooth (Bluetooth, col. 10 lines 38-58) and WLAN communication signals and to improve throughput in the wireless communication network.

Referring to claim 28, Lau et al. discloses a communication system for a wireless network comprising:

a plurality of wireless communication devices, which communicate using a first (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) and a second (DSSS, col. 4 lines 65-67, col. 9 lines 15-35 and col. 10 lines 15-25) frequency-overlapping (overlap, col. 6 lines 25-37) data exchange protocol;

a centralized coordination access point used to control the exchange of data and information between at least some of the wireless communication devices using at least one of a plurality of frequency-overlapping (overlap, col. 6 lines 25-37) data exchange protocols;

a signal processing component used by the centralized coordination access point to monitor the wireless communication signals of the first (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) and the second (DSSS, col. 4 lines 65-67, col. 9 lines 15-35 and col. 10 lines 15-25) protocol;

an evaluation component used by the centralized coordination access point to identify impending collisions between the wireless communication signals of the first

(FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) and second protocol;

a coordination component used by the centralized coordination access point to determine the transmission relationship between the plurality of wireless network devices using the first (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) protocol, wherein the transmission relationship further identifies a communication link between a master (master, col. 10 lines 28-58 and col. 2 lines 50-65) device and a slave (slave, col. 10 lines 28-58) device, wherein the master (master, col. 10 lines 28-58 and col. 2 lines 50-65) device communicates with the slave (slave, col. 10 lines 28-58) device using downstream transmission signals and the slave (slave, col. 10 lines 28-58) device communicates with the master (master, col. 10 lines 28-58 and col. 2 lines 50-65) device using upstream transmission signals; and

a synchronization (synchronized, col. 3 lines 5-10; synchronization, col. 9 lines 5-10; synchronizes, col. 9 lines 38-50) component used by the centralized coordination access point to implement a collision (collision, col. 2 lines 25-38) avoidance procedure based on the type of communication link between the master (master, col. 10 lines 28-58 and col. 2 lines 50-65) device and the slave (slave, col. 10 lines 28-58) device to reduce collisions and improve throughput in the wireless communication network.

Referring to claim 31, Lau et al. discloses the system of claim 28, wherein one of the plurality of frequency-overlapping (overlap, col. 6 lines 25-37) data exchange

protocols further comprises the Bluetooth (Bluetooth, col. 10 lines 38-58) network protocol.

Referring to claim 32, Lau et al. discloses the system of claim 28, wherein one of the plurality of frequency-overlapping (overlap, col. 6 lines 25-37) data exchange protocols further comprises the IEEE 802.11B wireless local area network (WLAN) protocol.

Referring to claim 34, Lau et al. discloses a method of scheduling a plurality of wireless communication signals between a first (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) and second (DSSS, col. 4 lines 65-67, col. 9 lines 15-35 and col. 10 lines 15-25) protocol that operate with overlapping (overlap, col. 6 lines 25-37) communication frequencies in a plurality of wireless network devices, the method comprising:

monitoring the wireless communication signals of the first (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) and the second (DSSS, col. 4 lines 65-67, col. 9 lines 15-35 and col. 10 lines 15-25) protocols;

identifying impending collisions (collision, col. 2 lines 25-38) between the wireless communication signals of the first (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) and the second (DSSS, col. 4 lines 65-67, col. 9 lines 15-35 and col. 10 lines 15-25) protocol;

determining the transmission relationship between the plurality of wireless network devices using the first (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3

lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) protocol, wherein the transmission relationship further identifies a type of communication link between a master (master, col. 10 lines 28-58 and col. 2 lines 50-65) device and a slave (slave, col. 10 lines 28-58) device; and

implementing a collision (collision, col. 2 lines 25-38) avoidance procedure based on the type of communication link between the master (master, col. 10 lines 28-58 and col. 2 lines 50-65) device and the slave device to reduce collisions (collision, col. 2 lines 25-38) and improve throughput in the wireless communication network.

Referring to claim 47, Lau et al. discloses a method of scheduling a plurality of wireless communication signals derived from a frequency hopping spread spectrum (FHSS) (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) protocol and a direct sequence spread spectrum (DSSS) (DSSS, col. 4 lines 65-67, col. 9 lines 15-35 and col. 10 lines 15-25) protocol that are transmitted with overlapping (overlap, col. 6 lines 25-37) communication frequencies, the method comprising:

monitoring the wireless communication signals of the FHSS (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) and the DSSS (DSSS, col. 4 lines 65-67, col. 9 lines 15-35 and col. 10 lines 15-25) protocols;

identifying impending collisions (collision, col. 2 lines 25-38) between the wireless communication signals of the FHSS (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65,

col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) and the DSSS (DSSS, col. 4 lines 65-67, col. 9 lines 15-35 and col. 10 lines 15-25) protocols;

determining the transmission relationship between the plurality of wireless network devices using the FHSS (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) protocol, wherein the transmission relationship further identifies a type of communication link between an FHSS (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) master (master, col. 10 lines 28-58 and col. 2 lines 50-65) device and an FHSS (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) slave (slave, col. 10 lines 28-58) device; and

implementing a collision (collision, col. 2 lines 25-38) avoidance procedure based on the type of communication link between the FHSS (FHSS, col. 2 lines 15-25 and col. 2 lines 55-65, col. 3 lines 1-5, col. 4 lines 60-67, col. 7 lines 15-25 and col. 10 lines 15-25) master (master, col. 10 lines 28-58 and col. 2 lines 50-65) device and the DSSS (DSSS, col. 4 lines 65-67, col. 9 lines 15-35 and col. 10 lines 15-25) slave (slave, col. 10 lines 28-58) device to reduce collisions (collision, col. 2 lines 25-38) and improve throughput in the wireless communication network.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 14, 34 and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by Sekihata et al. (U.S. Patent No. 5,682,381).

Referring to claim 1, Sekihata et al. discloses a transmission coordination device (Figure 2 and respective portions of the spec.) for a wireless communication network, wherein a first plurality of communication devices using a first protocol (FHSS, col. 1 lines 60-65) and a second plurality of communication devices using a second (DSSS, col. 1 lines 60-65) protocol exchange information within the wireless communication network using overlapping (overlap, col. 1 lines 39-62) communication frequencies, the device comprising:

a signal processing (processor, Figure 5 and respective portions of the spec.) component configured to receive information derived from the first and second plurality of network devices;

a traffic evaluation component (LAN controller, Figures 3 and 5 and respective portions of the spec.) that assesses the information received by the signal processing component to identify impending collisions (collision, col. 1 lines 50-55 and col. 12 lines 54-67) between the first (FHSS, col. 1 lines 60-65) and second (DSSS, col. 1 lines 60-65) protocol; and

a traffic coordination component (transmission timing decision unit, col. 2 lines 65-67 and col. 3 lines 20-30) that determines a communication link type between a master (master, col. 1 lines 40-60 and col. 12 lines 54-67) device and a slave (slave, col. 1 lines 40-60) device using the first (FHSS, col. 1 lines 60-65) protocol based on the

type of communication link between the master (master, col. 1 lines 40-60 and col. 12 lines 54-67) device and the slave (slave, col. 1 lines 40-60) device.

Referring to claim 14, Sekihata et al. discloses a centralized coordination device (Figure 2 and respective portions of the spec.) for a wireless communication network, wherein information exchanged devices using a first (FHSS, col. 1 lines 60-65) protocol and a second (DSSS, col. 1 lines 60-65) protocol transmit a plurality of frequency-overlapping communication signals in the wireless communication network, the device comprising:

a signal processing (processor, Figure 5 and respective portions of the spec.) component configured to receive and analyze timing characteristics from the plurality of frequency-overlapping (overlap, col. 1 lines 39-62) communication signals;

an evaluation component (LAN controller, Figures 3 and 5 and respective portions of the spec.) configured to communicate with the signal processing component and further configured to determine a type of communication link type established by the information exchange devices using the first (FHSS, col. 1 lines 60-65) protocol; and

a coordination component (transmission timing decision unit, col. 2 lines 65-67 and col. 3 lines 20-30) used to prioritize the plurality of frequency-overlapping (overlap, col. 1 lines 39-62) communication signals based on the timing characteristics and the communication link type to reduce collisions (collision, col. 1 lines 50-55 and col. 12 lines 54-67) in the information exchange of the first (FHSS, col. 1 lines 60-65) and second (DSSS, col. 1 lines 60-65) protocols.

Referring to claim 34, Sekihata et al. discloses a method of scheduling a plurality of wireless communication signals between a first (FHSS, col. 1 lines 60-65) and second (DSSS, col. 1 lines 60-65) protocol that operate with overlapping (overlap, col. 1 lines 39-62) communication frequencies in a plurality of wireless network devices, the method comprising:

monitoring the wireless communication signals of the first (FHSS, col. 1 lines 60-65) and the second protocols;

identifying impending collisions (collision, col. 1 lines 50-55 and col. 12 lines 54-67) between the wireless communication signals of the first (FHSS, col. 1 lines 60-65) and the second (DSSS, col. 1 lines 60-65) protocol;

determining the transmission relationship between the plurality of wireless network devices using the first protocol, wherein the transmission relationship further identifies a type of communication link between a master (master, col. 1 lines 40-60 and col. 12 lines 54-67) device and a slave (slave, col. 1 lines 40-60) device; and

implementing a collision (collision, col. 1 lines 50-55 and col. 12 lines 54-67) avoidance procedure based on the type of communication link between the master (master, col. 1 lines 40-60 and col. 12 lines 54-67) device and the slave (slave, col. 1 lines 40-60) device to reduce collisions (collision, col. 1 lines 50-55 and col. 12 lines 54-67) and improve throughput in the wireless communication network.

Referring to claim 47, Sekihata et al. discloses a method of scheduling a plurality of wireless communication signals derived from a frequency hopping spread spectrum (FHSS) (FHSS, col. 1 lines 60-65) protocol and a direct sequence spread spectrum

(DSSS) (DSSS, col. 1 lines 60-65) protocol that are transmitted with overlapping (overlap, col. 1 lines 39-62) communication frequencies, the method comprising:

monitoring the wireless communication signals of the FHSS (FHSS, col. 1 lines 60-65) and the DSSS (DSSS, col. 1 lines 60-65) protocols;

identifying impending collisions (collision, col. 1 lines 50-55 and col. 12 lines 54-67) between the wireless communication signals of the FHSS (FHSS, col. 1 lines 60-65) and the DSSS (DSSS, col. 1 lines 60-65) protocols;

determining the transmission relationship between the plurality of wireless network devices using the FHSS (FHSS, col. 1 lines 60-65) protocol, wherein the transmission relationship further identifies a type of communication link between an FHSS (FHSS, col. 1 lines 60-65) master (master, col. 1 lines 40-60 and col. 12 lines 54-67) device and an FHSS (FHSS, col. 1 lines 60-65) slave (slave, col. 1 lines 40-60) device; and

implementing a collision (collision, col. 1 lines 50-55 and col. 12 lines 54-67) avoidance procedure based on the type of communication link between the FHSS (FHSS, col. 1 lines 60-65) master (master, col. 1 lines 40-60 and col. 12 lines 54-67) device and the DSSS (DSSS, col. 1 lines 60-65) slave (slave, col. 1 lines 40-60) device to reduce collisions and improve throughput in the wireless communication network.

8. Claims 1, 14, 34 and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoneda et al. (U.S. Patent No. 5,852,405).

Referring to claim 1, Yoneda et al. discloses a transmission coordination device for a wireless communication network, wherein a first plurality of communication devices using a first (FHSS, col. 2 lines 1-7) protocol and a second plurality of communication devices using a second (DSSS, col. 2 lines 1-7) protocol exchange information within the wireless communication network using overlapping (overlap, col. 1 lines 64-67) communication frequencies, the device comprising:

a signal processing component (master stations, col. 4 lines 1-15) configured to receive information derived from the first and second plurality of network devices;

a traffic evaluation component (LAN controller, col. 4 lines 1-31) that assesses the information received by the signal processing component to identify impending collisions (collision, col. 1 lines 55-65) between the first (FHSS, col. 2 lines 1-7) and second (DSSS, col. 2 lines 1-7) protocol; and

a traffic coordination component (channel management table, col. 4 lines 1-31) that determines a communication link type between a master (master, col. 1 lines 65-67 and col. 4 lines 1-15) device and a slave (slave, col. 1 lines 25-35 and col. 4 lines 1-15) device using the first (FHSS, col. 2 lines 1-7) protocol based on the type of communication link between the master (master, col. 1 lines 65-67 and col. 4 lines 1-15) device and the slave (slave, col. 1 lines 25-35 and col. 4 lines 1-15) device.

Referring to claim 14, Yoneda et al. discloses a centralized coordination device for a wireless communication network, wherein information exchanged devices using a first (FHSS, col. 2 lines 1-7) protocol and a second (DSSS, col. 2 lines 1-7) protocol

transmit a plurality of frequency-overlapping (overlap, col. 1 lines 64-67) communication signals in the wireless communication network, the device comprising:

a signal processing component (master stations, col. 4 lines 1-15) configured to receive and analyze timing characteristics from the plurality of frequency-overlapping (overlap, col. 1 lines 64-67) communication signals;

an evaluation component (LAN controller, col. 4 lines 1-31) configured to communicate with the signal processing component and further configured to determine a type of communication link type established by the information exchange devices using the first (FHSS, col. 2 lines 1-7) protocol; and

a coordination component (channel management table, col. 4 lines 1-31) used to prioritize the plurality of frequency-overlapping (overlap, col. 1 lines 64-67) communication signals based on the timing characteristics and the communication link type to reduce collisions (collision, col. 1 lines 55-65) in the information exchange of the first (FHSS, col. 2 lines 1-7) and second (DSSS, col. 2 lines 1-7) protocols.

Referring to claim 34, Yoneda et al. discloses a method of scheduling a plurality of wireless communication signals between a first (FHSS, col. 2 lines 1-7) and second (DSSS, col. 2 lines 1-7) protocol that operate with overlapping (overlap, col. 1 lines 64-67) communication frequencies in a plurality of wireless network devices, the method comprising:

monitoring the wireless communication signals of the first (FHSS, col. 2 lines 1-7) and the second (DSSS, col. 2 lines 1-7) protocols;

identifying impending collisions (collision, col. 1 lines 55-65) between the wireless communication signals of the first (FHSS, col. 2 lines 1-7) and the second (DSSS, col. 2 lines 1-7) protocol;

determining the transmission relationship between the plurality of wireless network devices using the first (FHSS, col. 2 lines 1-7) protocol, wherein the transmission relationship further identifies a type of communication link between a master (master, col. 1 lines 65-67 and col. 4 lines 1-15) device and a slave (slave, col. 1 lines 25-35 and col. 4 lines 1-15) device; and

implementing a collision (collision, col. 1 lines 55-65) avoidance procedure based on the type of communication link between the master device and the slave (slave, col. 1 lines 25-35 and col. 4 lines 1-15) device to reduce collisions (collision, col. 1 lines 55-65) and improve throughput in the wireless communication network.

Referring to claim 47, Yoneda et al. discloses a method of scheduling a plurality of wireless communication signals derived from a frequency hopping spread spectrum (FHSS) (FHSS, col. 2 lines 1-7) protocol and a direct sequence spread spectrum (DSSS) (DSSS, col. 2 lines 1-7) protocol that are transmitted with overlapping (overlap, col. 1 lines 64-67) communication frequencies, the method comprising:

monitoring the wireless communication signals of the FHSS (FHSS, col. 2 lines 1-7) and the DSSS (DSSS, col. 2 lines 1-7) protocols;

identifying impending collisions (collision, col. 1 lines 55-65) between the wireless communication signals of the FHSS (FHSS, col. 2 lines 1-7) and the DSSS (DSSS, col. 2 lines 1-7) protocols;

determining the transmission relationship between the plurality of wireless network devices using the FHSS (FHSS, col. 2 lines 1-7) protocol, wherein the transmission relationship further identifies a type of communication link between an FHSS (FHSS, col. 2 lines 1-7) master (master, col. 1 lines 65-67 and col. 4 lines 1-15) device and an FHSS (FHSS, col. 2 lines 1-7) slave (slave, col. 1 lines 25-35 and col. 4 lines 1-15) device; and

implementing a collision (collision, col. 1 lines 55-65) avoidance procedure based on the type of communication link between the FHSS (FHSS, col. 2 lines 1-7) master (master, col. 1 lines 65-67 and col. 4 lines 1-15) device and the DSSS (DSSS, col. 2 lines 1-7) slave (slave, col. 1 lines 25-35 and col. 4 lines 1-15) device to reduce collisions (collision, col. 1 lines 55-65) and improve throughput in the wireless communication network.

Allowable Subject Matter

9. Claims 29, 30 and 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

10. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(571) 273-8300, (for formal communications intended for entry)

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jamal A. Fox whose telephone number is (571) 272-3143. The examiner can normally be reached on Monday-Friday 6:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (571) 272-3134. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to 2600 Customer Service whose telephone number is (571) 272-2600.

Jamal A. Fox

Jamal A. Fox

WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER